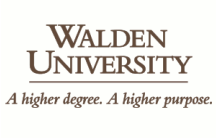

2016

Chronic Disease Self-Management Program

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2016

Abstract

Chronic Disease Self-Management Program

by

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MS, Texas Tech University, 2010

BS, Texas Tech University, 2008

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

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Abstract

The World Health Organization noted that 2 global health problems have reached epidemic proportions: obesity and type 2 diabetes. These conditions affect nearly 170 million people worldwide. The clinical practice problem addressed by this project was the prevalence of adults ages 50 and older in an ambulatory care setting who suffer from obesity and diabetes and may benefit from a tailored weight management and nutrition education intervention. The purpose of this project was to design a program that would decrease body mass index and hemoglobin A1c in older patients through adaption of the Chronic Disease Self-Management Program. The evidence supporting this project was obtained through a systematic literature review. The self-efficacy theory guided the project, and the evidence-based practice model used to plan the translation of the evidence into practice was the plan-do-check/study-act cycle, a continuous process improvement model used in many health care settings. The product of the project was an education intervention implementation plan that will be agreed upon by the project team and tracked using a Gantt chart. The program's effectiveness will be evaluated by analyzing the themes of qualitative feedback from patients who complete the program and through comparisons using *t* test statistics of body mass index and A1c that will be collected at 12 weeks and 12 months after the program start. The social change expected of this program, when implemented, is an increase in patients' engagement in and self-management of their care and a more trusting relationship among patients and the health care team. The recommendations from this project also may be useful in addressing health disparities often experienced by patients suffering from obesity and diabetes.

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Section 1: Nature of the Project

Introduction

According to Radford, Jones, and Winterstein (2015), body mass index (BMI) is "an anthropomorphic measure that allows consideration of relationships among body weight, the incidence of disease, and premature death" (para. 1). BMI is a very useful measurement that may reveal health problems. BMI has been used in epidemiologic research to describe the correlations between overweight and obesity and type 2 diabetes mellitus (DM), cardiovascular diseases, various cancers, and other health problems that can lead to further morbidity and mortality (Callahan, 2013; Chan & Woo, 2010). According to Rice, Kocurek, and Snead (2010), increased BMI "has been linked to the national increase in diabetes mellitus" (para. 2). Rice et al. (2010) believed that "health care costs related to obesity (a BMI over 30) and DM are substantial" (para. 2). According to Rice et al. (2010), "DM is the seventh leading cause of death, a major cause of heart disease and stroke, and the leading cause of adult blindness, kidney failure, and nontraumatic lower extremity amputations" (para. 1). DM is responsible for $116 billion in direct medical costs in the United States and $58 billion more in indirect costs, such as disability (Rice et al., 2010). These latest statistics from the Centers for Disease Control and Prevention (CDC, 2014) reinforced the need to prevent DM and manage it to avoid adverse outcomes for patients. According to Wild, Roglic, Green, Sicree, and King (2004), "the prevalence of DM for all age groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030" (p. 1047). Wild et al. (2004) "believe that the total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030"

(p. 1047). Research has indicated that the "diabetes epidemic" will continue even if levels of obesity remain constant (Wild et al., 2004, p. 1047).

The literature supports obesity's role as a contributing factor to DM; however, it also was reported that being engaged in physical activity or exercising and improving nutrition by eliminating junk foods helps prevent obesity and diabetes. Like other major chronic diseases, prevention at all levels (primary, secondary, and tertiary) is the key to best outcomes.

The prevalence of obesity, according to Villareal, Apovian, Kushner, and Klein (2005), is increasing in all age groups, including adults over 50 years of age, and older adults, defined as those 65 years of age and older (para. 1). According to the CDC (2010), "more than 72 million adults are obese" (para. 2). Persons who are obese have medical costs that are $1,429 higher than individuals of normal weight, and no state in the United States has an obesity rate less than 15%, which is the national goal (CDC, 2010). However, the appropriate clinical approach to obesity in older persons is controversial because of the reduction in relative health risks associated with increasing BMI in older adults, the uncertain effectiveness of obesity treatment in this group, and the potentially harmful effects of weight loss on muscle and bone mass (Villareal, Apovian, Kushner, & Klein, 2005).

Researchers have argued that an increase in body fat is associated with an increased risk of metabolic diseases such as DM, hypertension, and dyslipidemia (Bays, Chapman, & Grandy, 2007). Bays et al. (2007) stated that defining the relationship between body weight and metabolic diseases is critical for better understanding of the

underlying pathophysiologic processes leading to these diseases. According to the CDC, we are eating ourselves into a diabetes epidemic. "DM and obesity have an entangled relationship, with type 2 diabetes strongly associated with obesity" (Hussain, 2011, para. 1). Hussain (2011) stated that "obesity stands out as a risk factor for Type 2 DM. Of the people diagnosed with type 2 diabetes, about 80 to 90 percent are also diagnosed as obese" (Diabetic Care Services, 2015, para. 1). Being overweight produces extra stress on your body in a variety of ways, including your body's ability to maintain proper blood glucose levels (DCS, 2015, para. 4). It is believed that being overweight can cause your body to become resistant to insulin (DCS, 2015, para. 4). According to DCS (2015), if you already have diabetes, this means you will need to take even more insulin to get sugar into your cells (para. 4). And if you do not have diabetes, the prolonged effects of the insulin resistance can eventually cause you to develop the disease (DCS, 2015).

Problem Statement

The problem that was addressed by this DNP project is the increasing prevalence of adults ages 50 and older in an ambulatory setting who suffer from obesity and diabetes and may benefit from a tailored weight management and nutrition education intervention. According to the World Health Organization (WHO, 2015), "although there are commonly used definitions of old age, there is no general agreement on the age at which a person becomes old" (para. 1). For this project, 50 years of age and older is considered the definition of an older person.

Although the project has not been implemented, it was designed for patients to be recruited from an ambulatory clinic that is part of a public university-affiliated health

care system. The setting where the project development took place was a health care center located on the west end of Houston, Texas. The clinic cares for and sees roughly 200 patients per day and 4,000 patients per month. Ten percent of the number of patients who are seen could be recruited for a study on obesity and diabetes. The clinic provides adult and pediatric care to residents of Harris County.

Purpose

The purpose of the project was to design a program that would decrease BMI and HgbA1c in a sample of older patients through use of the Chronic Disease Self-Management Program (CDSMP). The goal was to incorporate evidence-based research findings into the patients' health self-care practices (National Diabetes Education Program, 2014). The objectives to be achieved were a decrease in BMI of 5% to 10% of current BMI over the three months of the program and a decrease in HgbA1c levels to below 2% over the same timeframe.

According to Bostock-Cox (2014), "management of obesity is central to the prevention of diabetes and its complications" (p. 25). There has been evidence that significant weight loss through a very low calorie diet (600 calories/day) or through bariatric surgery in people who are overweight and have recently been diagnosed with type 2 diabetes, may even lead to remission of the condition (Bostock-Cox, 2014). However, more modest weight losses (5% to 10% of starting weight) have been shown to improve glycemic control and reduce the risk of developing diabetes in people who have impaired fasting glycemia or impaired glucose tolerance (Bostock-Cox, 2014). The objectives of the Beverly Bostock-Cox study were achieved through engaging patients in

watching videos about diabetes and weight loss, reading a self-care handbook that discusses underlying diabetes and weight loss instructions, and completing a literacy test. According to Kim and Youn (2015), for individuals with a chronic illness, having an adequate level of health education is essential to obtaining and understanding the health information and services needed to engage in managing and making decisions about their own health. The guiding focused question for this doctoral project was: Does the implementation of the CDSMP in an ambulatory clinic setting result in decreased BMI and HgbA1c in obese adults ages 50 and older with diabetes?

Nature of the Doctoral Project

The evidence that was collected to meet the purpose of this doctoral project to develop an implementation and evaluation plan with the project team included literature on outcome studies that showed benefits of implementing the CDSMP. A study in Alaska revealed that a population of 131 persons with a mean age of 57 who participated in the CDSMP and diabetes self-management education had a positive outcome of body weight loss and lower HgbA1c levels (National Council of Aging, NCOA; 2015). The literature also showed that the CDSMP helped to achieve triple aim goals. The triple aim outcomes were: 1) better health, defined as improvement in self-reported health, increased number of days per week being moderately active, decreased depression, increased health-related quality of life, decreased unhealthy physical days, and decreased unhealthy mental days, 2) better care by improvement in communication with doctors, medication compliance, and confidence in filling out medical forms, and 3) lowered

health costs by $713.80 per person by decreasing emergency room visits and hospital utilization.

The project plan developed for implementation and evaluation at the clinic to decrease BMI and HgbA1c among patients through adoption of the CDSMP will be delivered to the clinic administration in the form of a Gantt chart; a recruitment plan for patients; a pre- and post-questionnaire to be conducted at intake, 12 weeks, and 12 months; a post-education series questionnaire; and an evaluation plan. A supportive and empowering approach will be used in this project to organize and deliver the project. As the project leader, I will be responsible for setting the stage for implementing this project so that it will affect the overall outcomes of health and health behaviors of patients within the community.

After the implementation phase, I will continue to be involved with the team to focus efforts on educating the patients in self-care and building trusting relationships that will support them in maintaining or continuing to improve their BMI and HgbA1c. According to California Health Care Foundation (2010), a participatory relationship between health care workers and patients is one of the most successful factors in promoting healthy behaviors.

Significance

Decreasing BMI and HgbA1c is significant and relevant in the ambulatory setting as a way to reduce long-term health care expenses and utilization. Many people have more than one chronic condition. The CDSMP is delivered in a six-week educational workshop for people with chronic disease such as diabetes and obesity (Stanford School

of Medicine, 2014). Coupled with clinical care, this program teaches participants how to exercise and eat properly, use medications appropriately, solve everyday problems about their medical conditions, and communicate effectively with family, friends, and health care providers (Stanford School of Medicine, 2014). The CDSMP workshops are provided in community settings such as senior centers, churches, libraries, and hospitals (Stanford School of Medicine, 2014). According to Stanford School of Medicine (2014), "each workshop is led by a pair of trained leaders; it is recommended that at least one of the leaders is a person with chronic disease" (para. 2). The CDSMP is especially helpful for these people, as it gives them a personalized care plan, the skills to coordinate all things needed to manage their health, and ways to keep active in their lives (Stanford School of Medicine, 2014). By utilizing the CDSMP, the project focuses on gaining a trusting relationship by working with the patients individually to develop goals for improving active involvement and engagement in health and health decision-making.

The financial implications for not addressing this problem would be costly and would jeopardize the funding that the organization receives from the delivery system reform incentive payment (DSRIP). DSRIP initiatives were narrowly focused on providing funds to safety net hospitals for delivery system reform, according to Gates, Rudowitz, and Guyer (2014). For the patient, lack of BMI and HgbA1c control will lead to increased out-of-pocket expenses, increased disease progression, and increased risk of morbidity and mortality. According to the Stanford School of Medicine (2014), there is evidence that the CDSMP results in reductions in health care expenditures. Implementing the CDSMP in the ambulatory setting includes educating the community

and engaging patients in their care as a preventive initiative that will assist in lowering the numbers of hospital admissions and emergency readmissions. The Stanford School of Medicine (2014) stated that "the outcome is consistent with the available evidence, but is limited by the fact that measurement approaches differ across studies and utilization is not uniform" (para. 5). In four studies conducted by the Stanford School of Medicine (2014), there was fewer emergency room (ER) visits; in four studies, there were fewer days in the hospital for participants; in three studies, there were fewer hospitalizations; and, in two studies, there were reductions in outpatient visits. The results of these studies were statistically significant. The research team found no studies in which costs were increased (Stanford School of Medicine, 2014). According to Stanford School of Medicine (2014), the available evidence suggested that CDSMP results in more appropriate utilization of health care resources by addressing health care needs in outpatient settings rather than ER visits and hospitalizations.

A study done in South Korea demonstrated that the use of the CDSMP for older Korean adults led to significant improvements in self-efficacy and physical activity (Kim & Youn, 2015). The program was applied to 30 clinic patients over a three-month trial. The CDSMP resulted in significant, measurable improvements in patient outcomes and quality of life (Stanford School of Medicine, 2014). Completion of CDSMP as a self-management intervention for adults ages 50 and older with an increased BMI and HgbA1c is not constrained by race/ethnicity or socioeconomic levels (Helduser, Bolin, Vuong, Moudouni, Begaye, Huber, Ory, & Forjuoh, 2013).

Approach

The clinic is nonprofit and depends on grant funding to maintain daily operations. Assuring quality indicators and benchmarks are met play a vital role in reimbursement for services, and supporting recognition from National Committee for Quality Assurance (NCQA). The requirements to receive this designation consist of both an on- and off-site evaluation (NCQA, 2015). NCQA (2015) states "the assessments are conducted by physicians, if appropriate, and experts in the product being evaluated" (para. 2). According to NCQA (2015), an oversight review committee of physicians analyzes the team's findings and assigns a certification level based on the organization's performance against NCQA's standards (para. 2). The seal is widely recognized and represents a seal of quality (NCQA, 2015, para. 2). According to the NCQA, "organizations incorporating the seal into advertising and marketing materials must first pass a rigorous, comprehensive review and must annually report on their performance" (para. 2). The NCQA is a private, 501(c) (3) not-for-profit organization dedicated to improving health care quality. This project can help to receive the NCQA designation by decreasing HgbA1c levels. A group of clinicians from different disciplinary teams within the ambulatory clinic was gathered to implement this quality improvement project using the CDSMP to decrease HgbA1c and BMI in a group of older adults ages 50 and above. According to Health Resource and Services Administration (HRSA; 2015), members of a team bring expert knowledge of the work they do for patients. The team met to discuss and assure we have the tools and resources necessary to achieve its established goal by reviewing evidence-based literature articles, and staying abreast of best practices.

Definitions

Chronic disease self-management program: The Stanford School of Medicine (2014) defined CDSMP as a workshop presented in 2.5 hours, once a week, for six weeks in community settings such as senior centers, churches, libraries, and hospitals. People with various chronic diseases attended together (Stanford School of Medicine, 2014). Two trained leaders facilitated the workshops, one or both of whom were non-health professionals with chronic diseases themselves (Stanford School of Medicine, 2014).

Chronic: is defined as something that continues over an extended period of time and does not easily or quickly go away (U.S. National Library of Medicine, 2015).

Disease: is defined as an illness or sickness characterized by specific signs and symptoms (Medicine Health, 2015).

Obesity: is an unhealthy excess of body fat, which increases the risk of medical illness and premature mortality (Villareal et al., 2005).

Diabetes: is as a disease in which the body is unable to use and store glucose (a form of sugar) properly. Glucose backs up in the bloodstream causing one's blood glucose (sometimes referred to as blood sugar) to rise too high (Joslin Diabetes Center, 2015). Diabetes, according to the Harvard Health Publication (2009), is defined as a common, chronic disorder marked by elevated levels of blood glucose, or sugar. It occurs when cells do not respond appropriately to insulin (a hormone secreted by the pancreas), and when the pancreas cannot produce more insulin in response (Harvard Health Publication, 2009).

BMI: is a number calculated from a person's weight and height. BMI provides a reliable indicator of body fatness for most people and is used to screen for weight categories that may lead to health problems (CDC, 2014).

HgbA1c: The American Diabetes Association (2015) defined hemoglobin A1C as a blood screening that measures average blood sugar control for the past two to three months. The results give a good idea of whether or not a person has or is at risk for diabetes (ADA, 2015). For people with diabetes, it indicates how well the diabetes treatment plan is working (ADA, 2015).

Limitations

A limitation of this project was that not all patients within the community will be able to participate; only patients who have a history of coming to their appointments at the community clinic and are currently enrolled as a patient can be included. The participants will be randomly selected, and only the first 30 will be able to participate in the first educational intervention using the CDSMP. The participants will be patients who volunteered and met the requirements of having a BMI of 30 or greater and a HgbA1c of 12 or higher; therefore, the results will be applicable to those who are perhaps more motivated and willing to take part in a structured education program (Chan et al., 2011). The planned program length is three months (12 weeks) with a follow-up period at 12 months. An extended follow-up period will be useful to confirm that the skills acquired are incorporated into the participants' daily lives and continue to result in control of BMI and HgbA1c (Chan et al., 2011). Extending the follow-up period will also keep the participants active and engaged in their medical care and with something to

look forward to if they know they are being followed and that life changes are expected from them.

The last limitation is that the project could not be implemented during the timeframe of the DNP program. Therefore, the actual outcomes of the planned project are not available.

Scope and Delimitations

The CDSMP was developed and tested in a randomized, controlled trial by the Patient Education Research Center at the Stanford University School of Medicine. The population of patients that will be asked to participate in the project are primarily low-income indigent Hispanics and African Americans, who are over 50 years of age with a HgbA1c greater than 12 and BMI greater than 30.

Summary

According to Kim and Youn (2015), "a high prevalence of chronic illness in older adults is associated with a reduced quality of life and escalating health care costs and has led to an increased interest in the role of self-care activities in long-term illness" (p. 42). The overall goal of this DNP project was to enable participants to build self-confidence to take part in maintaining their health and managing their chronic health conditions through engaging them in prevention and health promotion activities that will become second nature for them.

The CDSMP is suitable for implementation in the clinic because it will show patients that the providers care about them as individuals; that we use evidence-based guidelines for preventive, acute, and chronic care management; and that we are

continuously trying to improve our quality of care by decreasing HgbA1c and BMI (NCQA, 2015, p. 15). Lastly, implementation of the project in the organization will help in the effort to receive recognition from NCQA for being a patient-centered medical home.

Section 2: Background, Context, and Literature

Introduction

The problem that was addressed in the project was the increasing prevalence of obesity and diabetes in an ambulatory clinic setting. The following section will cover the literature specific to the project and the evidence basis for incorporating the CDSMP into the clinical site for the project. In addition, the model that will be used to implement the CDSMP at the clinic is described.

Background and Context

According to the National Council of Aging (2015), "the traditional medical model of caring for people with chronic conditions that focuses more on the illness than on the patient is expensive and often ineffective" (para. 2). It is believed that more than two-thirds of all health care costs are for treating chronic illnesses (NCOA, 2015, para. 2). Ninety-five percent of health care costs for older Americans can be attributed to chronic diseases, and less than 1% of health care dollars are spent on prevention to improve overall health (NCOA, 2015, para. 2). NCOA and Stanford University have collaborated for nearly a decade to disseminate successful programs in-person and online that empower individuals with chronic conditions to manage their own care and improve their quality of life (NCOA, 2015). According to the NCOA (2015), "the CDSMP is the best known and most highly regarded self-management program for people with chronic conditions" (para. 1). Adopting the CDSMP has also been shown to save money, according to the NCOA (2015). Per person savings of $714 in emergency room visits and hospital utilization and per person net savings of $364 after considering program

costs of $350 per participant could potentially save $6.6 billion by reaching just 10% of Americans with one or more chronic conditions (NCOA, 2015, para. 7).

Harris Health System (HHS), formerly known as the Harris County Hospital District, was created by voter referendum in November 1965 and was formally designated as a political subdivision with taxing authority on January 1, 1966. The clinic site for this project is managed by the Harris Health System, which is a governmental entity with taxing authority that owns and operates three hospitals and numerous clinics throughout Harris County, Texas, including the city of Houston (Harris Health System, 2015). The clinic provides health care services to all residents of Harris County, is the first accredited medical institution in the county to be designated as an NCQA Medical Home, and is one of the largest clinics in the country (Harris Health System, 2015). The clinic is staffed with eight residents and 18 faculty doctors from Baylor College of Medicine.

Review of the Literature

The evidence for this project was obtained through a structured literature review and analysis of evidence-based research findings. A search of the peer-reviewed literature in the Current Index to Nursing and Allied Health Literature (CINAHL) full-text database was conducted. The search was initiated with the following key words: *self-management programs*, *chronic disease self-management programs*, *CDSMP*, *obesity*, *diabetes*, and *obesity and diabetes*. Numerous articles related to obesity as well as obesity and diabetes were retrieved. A total of 35 articles resulted from the query using the key word CDSMP. The articles older than 10 years were excluded. This

resulted in using 25 articles for the literature review. The articles were reviewed in detail. Of the 25 articles were a mix of randomized control trials and quasi-experimental studies. There were several well-designed studies available regarding the clinical outcomes for single disease self-management programs (Majers, 2014, p. 40). For programs in which individuals were taught self-management skills for single diseases, a number of results reported improvement in clinical outcomes and reductions in costs (Majers, 2014, p. 40). The articles were chosen based on positive results such as weight loss and decrease HgbA1c of the patients who successfully completed the CDSMP. The articles were also selected based on application of the CDSMP specifically to patients living with an increased BMI and HgbA1c.

Concepts, Models, and Theories

Majers (2014) stated "that these trends of rising health care costs demonstrate the need for alternative models of care to mitigate the risk factors associated with chronic disease" (p. 9). Fresh approaches are needed to manage chronic disease that will contain or reduce costs and produce value (Majers, 2014, p. 9). Erdem and Korda (2014) argued that "evidence-based self-management education and training programs have been widely implemented to help older adults manage their diabetes, and have shown improved psychosocial and clinical outcomes for participants" (p. 134). The CDSMP is well known in disease management and prevention models for engaging patients in their care. The importance of implementing the CDSMP and a diabetes-specific management program (DSMP) were discussed by Erden and Korda (2014). The authors used administrative data submitted by the 47 U.S. Administration of Community Living

(ACL) and U.S. Administration of Aging grantees as part of the Communities Putting Prevention to Work initiative. The participating patients all had a diagnosis of diabetes. The CDSMP was offered as a series of highly participative 2.5-hour sessions held once a week for six weeks. Ideal workshop sizes (recommended by Stanford University) ranged from 10 to 16 participants and were offered in community settings such as churches, area agencies on aging, senior centers, community health centers, local health departments, and hospitals (Erdem & Korda, 2014, p. 134).

Ideally, two trained peer leaders facilitated the workshops, one or both of whom had a chronic condition, including diabetes (Erdem & Korda, 2014, p. 135). Peer leaders and participants discussed the program material and problem-solved together to support each participant in developing strategies and action plans to address the personal challenges relating to session topics (Erdem & Korda, 2014). According to Erdem & Korda (2014) "participants used a workbook developed by Stanford and were given assignments as 'homework' to be completed before each session" (p. 135). The patients were also asked to develop an action plan with goals that they discussed with peers in the sessions (Erdem & Korda, 2014, p. 135).

A study was implemented to examine reductions in health care utilization among CDSMP participants to identify potential cost savings to the health care system as a result of program participation (Ahn, Smith, Altpeter, Post, and Ory 2013). Three specific purposes of this study were to: 1) document reductions in health care utilization among participants of the CDSMP national study, 2) calculate potential cost savings associated with ED visits and hospitalizations using age-adjusted national cost estimates, and 3)

extrapolate the cost savings estimation to American adults with one or more chronic conditions. Ahn et al. (2013) stated that this study reaffirmed the importance and potential of community-based self-management interventions rooted in public health to control health care costs among adults with chronic conditions. According to Ahn et al. (2013), it is clear that this intervention can influence all aspects of the Triple Aim (i.e., enhanced care, improved population health, and better health care value). According to Farrell (2008), findings from studies that included self-management programs indicated that self-efficacy may have a profound impact on health promotion, patient education, and clinical practice.

Self-efficacy is the theoretical foundation of the CDSMP. When applied to chronic disease self-management programs, self-efficacy serves as the conceptual framework upon which these programs are based (Majers, 2014, p. 12). According to Kardong-Edgen (2013), "self-efficacy is the belief that one can execute needed steps to achieve a goal" (p. 327). An individual exercising strong self-efficacy and using cognitive processes will choose to make decisions and adopt behaviors that are different to promote health and mitigate the consequences of chronic disease (Majers, 2014, p. 12).

The self-efficacy theory has been used numerous times in nursing with implementing a new task whether we are using it daily in our practice or if the patients are using it in their day-to-day setting while carrying out their daily activities (Majers, 2014, p. 12). Individuals can be proactive, make choices to adapt to changes in life and circumstances, and overcome perceived barriers, rather than simply undergo life experiences and manage stressors (Benight & Bandura, 2004; Weng, Dai, Huang, &

Chiang, 2010). Results occur or are increased through learning mastery of self-management tasks, observation of others, persuasion by others, and/or assessment of one's emotional state (McKenzie, Neiger, & Thackerary, 2009). Farrell (2008) believed that in many patient education programs, neither patients nor practitioners were taught the skills that would most enable them to carry out their role in and responsibility for disease management. Results are improved when ongoing education is implemented with intensive teaching versus passive teaching. The primary goal of the CDSMP is to assist people to cope with chronic disease. According to Farrell (2008), "effective teaching about chronic disease must be based more firmly on behavioral theories such as the self-efficacy theory and on research and evidence-based self-management programs such as the CDSMP" (para. 5).

The medical model of caring for people with chronic conditions is known as the traditional model. It focuses more on the illness than on the patient, is expensive, and is often ineffective (National Council of Aging, 2015). After researching and comparing various programs, the CDSMP was chosen to address the project problem of obesity and diabetes among older adults because it is less expensive than other programs and engages patients in the care and management of their own health.

Application of the CDSMP with an inter-professional team collaboration approach will help to guide self-management of obese patients with diabetes seen in the clinic. According to the Stanford School of Medicine (2014), the CDSMP is designed to enhance regular hospital treatment by providing disease-specific education on topics such as obesity, weight management, and diabetes control.

Models applied. The evidence-based practice model that was used to translate the CDSMP into practice is the plan-do-check/study-act (PDCA). The PDCA is well known for continuous process improvement in health care settings. It teaches organizations to plan an action, do it, check to see how it conforms to the plan, and act on what has been taught (Johnson, 2002). Tague (2004) stated that the PDCA is a four-step model for improving performance. The four phases in the PDCA cycle are: 1) Plan: identify and analyze the problem, 2) Do: develop and test a potential solution, 3) Check/Study: measure how effective the test solution was and analyze whether it could be improved in any way, and 4) Act: implement the improved solution fully. Tague (2004) believed the model should be used when improvement needs to be done in a workplace setting. The PDCA model is like a self-efficacy model as the affected persons cannot improve unless they decide to change. "Just as a circle has no end, the PDCA cycle should be repeated again and again for continuous improvement" (Tague, 2004, p. 391). The PDCA will be used with the implementation of this project plan as a test-and-learning tool for discovering effective and efficient ways to change a current process (HRSA, 2015, para. 3).

Relevance to Nursing Practice

The CDSMP is an evidence-based, peer-led program consisting of six sessions hosted over six consecutive weeks that empower participants to develop skills necessary for medical, social, and emotional management of chronic conditions. There is substantial evidence across studies that the CDSMP has a beneficial effect on physical and emotional outcomes and health-related quality of life (Stanford School of Medicine, 2014). According to Helduser et al. (2013), the CDSMP has been disseminated most recently through the Communities Putting Prevention to Work: CDSMP, funded by the American Recovery and Reinvestment Act of 2009 and led by the U.S. Administration on Aging in collaboration with the CDC and the Centers for Medicare and Medicaid Services.

The literature supported evidence-based practices and has shown that decreasing BMI and obesity are vital in combatting the rising prevalence of diabetes (Chan & Woo, 2010). The WHO estimated that more than one billion people are overweight, with 300 million meeting the criteria for obesity (Kulie et al., 2011). According to Kulie et al. (2011), "The Nurses' Health Study followed 84,000 female nurses for 16 years and found that being overweight or obese was the single most important predictor of DM" (p. 76). An increased risk of DM was seen in women with BMI values greater than 24 and a waist-to-hip ratio greater than 0.76.8 (Kulie et al., 2011). These data alone argue for interventions to be put in place and implemented for a favorable outcome in patients with increased BMI and HgbA1c.

According to Helduser (2013), obesity and resulting diabetes are primarily self-managed diseases. The long-term implications of addressing the problems of obesity and diabetes will be improved financial outcomes such as a decrease in ER visits and hospital re-admissions in the health care system and better patient quality of life. The short-term outcomes will be useful in further shaping the planning and implementation of the CDSMP (Kettner, Moroney, & Martin, 2013). For most individuals, successfully managing the disease requires a change in lifestyle to monitor diet, increase physical activity, and receive regular medical monitoring from a health care professional (Helduser et al., 2013). A patient self-management program to enhance skills in communication, problem solving, and goal setting can be important in the arsenal of the diabetes educator or primary care physician (Helduser et al., 2013).

Role of the DNP Student

My role for this project is to serve as the team champion and facilitator. My practicum hours for the DNP degree was completed at the government-funded ambulatory care clinic that provides nursing and medical care to low income indigent patients within the community. My relationship to the patients who will be recruited for participation in the project will be as the patient advocate. The majority of the patients we care for at the clinic have a diagnosis of diabetes, obesity, or both. My motivation for implementing this project is to educate the community and give them the proper educational background and resources needed to manage their disease and to interrupt the link between obesity and concurrent or subsequent diabetes.

Role of the Project Team

According to HRSA (2015), for quality improvement efforts to be efficient and sustained, leaders must show commitment to them. The project team will consist of a team champion (which is me) and the patient educator, a staff nurse, a nutritionist, a case manager, and a physician. The patient educator and nutritionist both suffer from a diagnosis of diabetes as well. My role as the team champion is to act as the facilitator to guide the project and assure that the team is meeting all time frames that have been agreed upon. The patient educator and staff nurse will be responsible for the recruitment of the patients assuring that they are established patients with a HbgA1c of 12 or greater and a BMI of 30 or greater. They will also lead and present the material to the group of patients in the series of classes over 12 weeks. The case manager will assure that the patients have the proper resources to be successful in the program. The physician will be available to answer any in-depth questions the patients might have. The project team collectively will share their expertise and contextual insight related to the doctoral project.

Summary

The Stanford School of Medicine (2014) provided evidence that the CDSMP results in reductions of health care expenditures. There is a range in the amount of money saved and the health care settings in which these cost savings/utilization decreases occurred. The CDSMP saved from $390 to $520 per patient over a two-year study period because participants used fewer health care services. CDSMP participants used fewer hospital and physician services than they had used before participating in the program, and fewer than persons who had not been involved in the CDSMP group (Stanford

School of Medicine, 2014). The statement "CDSMP results in reductions in health care expenditures" is made with a reasonably high degree of certainty. The team is satisfied that the evidence gathered supports implementation of a cost-effective intervention to improve patient and clinic outcomes.

Section 3: Collection and Analysis of Evidence

Introduction

The purpose of the project was to design a program to decrease BMI and HgbA1c in a sample of older patients through use of the CDSMP. The Walden University IRB approval number for this developmental project was 10-16-15-0484067.

Practice-Focused Question(s)

Will the CDSMP if implemented over three months in an ambulatory clinic setting decrease HgbA1c and BMI in adults ages 50 and older with diabetes?

Sources of Evidence

The Chronic Care Model (CCM) is one of the other programs that could have been used for this doctoral project. The CCM identifies the essential elements of a health care system that encourage high-quality chronic disease care. These elements are the community, the health system, self-management support, delivery system design, decision support, and clinical information systems (Group Health Research Institute, GHRI; 2006). According to GHRI (2006), "The CCM was developed by the staff at the MacColl Center for Health Care Innovation in the mid-1990s by drawing on available

literature about promising strategies for chronic illness management and organizing that literature in a new and more accessible way" (para. 3).

The CDSMP was chosen for this project because it provided an opportunity to build a relationship with the patients in an intimate setting by meeting weekly over several months. Additionally, providers learn in-depth detail about their patients' medical histories and social backgrounds, and collaboratively arrive at mutual goals that can be attained. The CDSMP also helped the patients gain self-confidence in their ability to control their symptoms and learn how their health problems affected their lives (NCOA, 2015). The CDSMP ultimately was chosen based on the studies that have consistently shown statistically significant improvements in a variety of health related measures, including self-efficacy, self-reported health, healthy behaviors, and health distress (NCOA, 2015). Lastly, the same studies have shown reductions in health care utilization, resulting in lower health care costs (NCOA, 2015).

Products of the DNP Project

This project was not conducted; instead, the project goal involved developing a program to be implemented by the organization at a later date. The deliverables for this project were: 1) A plan for implementation that will be agreed upon with the project team and tracked by using a Gantt chart that will show who, what, where, and when each of the steps in the program implementation and evaluation will be accomplished (Appendix D). The project team will present a CDSMP overview, followed by a meeting that will discuss the goals and outcomes that are expected after project implementation. I will be assigning specific tasks to the team members, including the nutritionist, the patient

educator, the staff nurse, the case manager, and the physician. 2) Recruitment of patients for enrollment in the program will be done by the staff nurse and patient educator. The inclusion criteria for recruitment of patients will be any patient who is an established patient with the clinic who has a BMI greater than 30 and HgbA1c greater than 12. 3) I searched for a suitable, valid, and reliable questionnaire in the literature, and permission to use the Stanford CDSMP questionnaire was not necessary. The Stanford questionnaire will be administered at the intake, at the educational intervention end (12 weeks), and at 12 months post implementation of the project by the staff nurse and patient educator and will be easy to read at a second grade level (Appendix B). The questionnaire will assist with answering the project question by providing baseline, post, and long-term data for the participants. 4) The post educational class series questionnaire (Appendix C) will be used to determine the patients' satisfaction with the program and areas for class delivery and content improvement. The questions will be validated with the nurse educator and other nurses in the clinic and will be administered at the end of the project by the nurse educator or me to obtain the feedback.

Data and Participants

The program's educational component effectiveness will be evaluated by analyzing the feedback from the patients who completed the post questionnaire and through the lab results that will be done at 12 weeks (end of educational sessions) and the next scheduled annual visit with their provider (12 months after the project start). The data will be analyzed by comparing pre and post lab work, the patients' comments, and comparison of pre-, post-, and long-term questionnaire findings. After data are collected,

data will be entered into Statistical Package for the Social Science (SPSS) for analysis by one of the members of the team. The data will be analyzed to determine whether the CDSMP had an effect on the patients' weight and blood glucose. Descriptive statistics will be performed for the sample population demographics and the answers to the pre-test/post-test questionnaire. The frequencies, percentages, means, and standard deviations will be computed for the two dependent variables: BMI and HgbA1c. Paired *t*-tests will be used to determine whether the two dependent variables changed from pre to post implementation of the CDSMP and whether the changes were sustained at 12 months post program start.

Summary

According to Liddy, Johnston, Guilcher, Irving, Hogel, and Jaglal (2015), one of the essential elements of high quality chronic disease care is self-management, defined as "the individual's ability to manage the symptoms, treatment, physical, and psychosocial consequences and lifestyle changes inherent in living with a chronic condition" (para. 1). Through implementation of the project using the deliverables, the organization will be able to address the clinical problem of increased BMI and HgbA1c. The proposed program is expected to empower participants by increasing their confidence, teaching them self-management skills, adding to their knowledge, and improving their interactions with the health care system (Liddy et al., 2015).

Section 4: Findings and Recommendations

Introduction

Rice et al. (2010) reported that diabetes is the seventh leading cause of death, one of the major causes of stroke and heart disease, and the leading cause of adult blindness, kidney failure, and non-traumatic lower extremity amputations. Increased BMI has been linked to an increase of DM (Rice et al., 2010). The purpose of the DNP project was to develop a plan for the organization to decrease BMI and HgbA1c in a sample of older patients through use of the CDSMP. The goal of the project, when implemented, will be to decrease current weight of participants by 5% to 10% over three months and decrease the HgbA1C levels by 2% over the same timeframe. The work products delivered for the DNP project are the detailed program implementation plan, the Gantt chart with timeframes and responsible party, the plan for recruitment of participants, the pre-test and post-test questionnaires, the participant satisfaction survey, and the data collection and analysis plan for evaluation of the program.

Discussion of Project Products/Results

The products that are needed for implementation of this project are the PDCA (Appendix A), the Stanford questionnaire to be used pre and post implementation and at 12 months, (Appendix B), the participant satisfaction survey (Appendix C), the Gantt chart (Appendix D), and a poster for project dissemination (Appendix E).

The PDCA will be used as the model for continuous improvement and to evaluate the progress of the program. The PDCA cycle is a systematic series of steps for gaining valuable information and knowledge for the continual improvement of a product or

process (Deming Institute, 2016). The cycle begins with the Plan step. This involves identifying a goal or purpose, formulating a theory, defining success metrics, and putting a plan into action (Deming Institute, 2016). The goal that was selected for this project by the team is reducing BMI and HgbA1c.

These activities are followed by the Do step, in which the components of the plan are implemented and acted upon (Deming Institute, 2016). The team will develop an action plan that will be used over the course of the program and which will include weekly group sessions with the program champion, clinical case manager, patient educator, and the nutritionist.

Next is the Check step, where outcomes are monitored to test the validity of the plan for signs of progress and success or for problems and areas for improvement (Deming Institute, 2016). The project team will be responsible for implementing the program plan as well as monitoring the outcomes. The plan will be evaluated by the team monthly to analyze progress against the program Gantt chart and make changes to the plan as necessary.

The Act step closes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal, change methods, or even reformulate a theory altogether (Deming Institute, 2016). The questionnaire will be administered at intake, 12 weeks, and 12 months. The participant satisfaction survey (Appendix C) will be administered after the educational class series and will be helpful for determining changes to be made to the educational content and presentation using a PDCA.

Findings and Implications

Health care professionals are challenged with increasingly complex illnesses and patients who must be educated about controlling their chronic diseases. The health care setting is often chaotic and needs to focus more on quality of care and patient-centeredness of care. Implementing the CDSMP is vital to the health care setting of the project to reduce overall expenditures and is needed to break the link between overweight or obesity and diabetes.

According to the National Council of Aging (2015), "addressing chronic conditions requires new strategies to improve function, delay health deterioration, and address the problems that people confront in their day-to-day lives" (para. 3). The NCOA and Stanford University have collaborated for nearly a decade to disseminate successful programs in-person and online that empower individuals with chronic conditions to manage their own care and improve their quality of life (NCOA, 2015, para. 3). Over 1,000 people with various chronic diseases participated in a controlled trial of CDSMP (Stanford School of Medicine, 2014, p. 2). According to the National Council of Aging (2015), "subjects who participated in CDSMP, compared to those that did not, demonstrated significant improvements in exercise, cognitive symptom management, and communication with physicians and self-reported general health, and reductions in health distress, fatigue, disability, and social/role activity limitations" (para. 7). These participants also spent fewer days in the hospital, and there was also a trend toward fewer outpatient visits and hospitalizations (NCOA, 2015, para. 7). These data yield a cost to savings ratio of approximately 1:4 (NCOA, 2015). Therefore, this project plays a

significant role for social change through development of the skills and coping strategies participants need to manage their symptoms. The CDSMP is a group process that includes action planning, interactive learning, behavior modeling, problem solving, decision-making, and most importantly, social support for change (Local Office of Aging, 2011).

Plan Proposed for Education Sessions

The sessions of education will be divided into three groups with 10 patients in each group. There will be a total of six sessions. The project will offer a zero session (or zero class), which is an information session offered prior to the official session as a marketing tool (Jiang et al., 2015). The zero session will focus on the background and history of the patient. The primary purpose of the zero session is to provide an overview of the workshop, explain expectations for workshop participation, and confirm commitment for those who have registered for the workshop (Jiang et al., 2015). The project champion and physician will teach the zero session.

The remaining group sessions will be taught by one of the members from the project team. Week 1 (session 1) the patients will be educated on techniques to address problems such as frustration, fatigue, pain, and isolation. The patient educator will teach this session. The project champion will teach week 2 (session 2), and the patients will learn appropriate exercises (type and duration) for maintaining and improving strength, flexibility, and endurance. The physician will explain appropriate use of medications in week 3 (session 3). The case manager will teach week 4 (session 4) regarding how to communicate effectively with family, friends, and health professionals. Week 5 (session

5) will cover nutrition and will be taught by the nutritionist. Lastly, week 6 (session 6) will be taught by the physician, who will explain how to evaluate new treatments (Galson, 2009).

Proposed Implementation Plan

The proposed plan for the implementation timeframe will be delivered through a Gantt chart (Appendix D). According to Gantt (2015), "a Gantt chart is one of the most popular and useful ways of showing activities (tasks or events) displayed against time" (para. 1). For the proposed program implementation, potential participants will be selected from a single provider panel of the ambulatory care clinic based on BMI (greater than or equal to 30) and HgbA1c (greater than or equal to 12). Ethnic backgrounds of participants will vary, as well as educational level. If the organization decides to implement the program, the capacity in the organization will be 30 participants in the first educational intervention group. These participants will be recruited from an ambulatory care clinic.

Proposed Participant Recruitment Plan

Potential participants will be identified through the electronic medical records (EMRs) of the organization to select patients with a diagnosis of obesity or diabetes (i.e., patients who have a BMI of 30 or greater and a HgbA1c of 12 or higher) within the last six months. These potential participants will be contacted by telephone by the patient educator to verify email addresses, phone numbers, and home addresses, and to update these data as necessary to ensure follow up. To verify the inclusion and exclusion criteria, patients' consent must first be obtained to review their medical records. Patients

will be contacted by the patient educator at the telephone number that is on file in their medical chart to describe the program if they met the inclusion criteria for BMI and HgbA1c. Patients who have expressed interest in participation in the program will be contacted by the team champion or the patient educator, who will provide additional information about the program and will screen to determine eligibility of patients interested in participating (Forjuoh et al., 2014). Patients will be excluded if they report alcohol or drug abuse, are pregnant or planning to become pregnant within 12 months, or are unwilling to sign an informed consent form for the program (Adepoju et al., 2014). A complete list of the names of the patients who met the inclusion criteria and expressed interest will be included in the process to select participants randomly. All of the patients' names will be placed in a hat and names can be drawn randomly from it. The desired end of project sample size is at least 30, so participants will be overenrolled to achieve that number of participants at 12-month follow up. To assure that the organization does not encounter difficulty in retaining participants, the topics discussed will not be sensitive, follow-up invitations to arrange pre-test and post-test interviews and future meeting times will be sent to the participants, and a follow-up phone call can be made to assure that there are not any schedule conflicts. A follow-up email or a reminder of the appointment times will be mailed to the participant's address on file.

According to Adepoju et al. (2014), in a recent study that was conducted using the CDSMP, most subjects were females (55%) and 72% of subjects had more than a high school education. Approximately 64% of subjects identified as non-Hispanic whites, 20% were Hispanics, and 16% were non-Hispanic Blacks. Over 64% of subjects

reported income ranges less than $50,000 per annum, and most subjects (37%) indicated they fell within the $25,000 to $49,000 per annum range (Adepoju et al., 2014). If the proposed program is implemented by the organization, the pool will differ in sample size and education. The mean subject age was 57 years, and the mean diabetes duration at orientation was 3.11 years (Adepoju et al., 2014). Over half of all participants reported eating healthfully three or more days of the week, and only a third of participants reported engaging in the recommended amount of physical activity four or more days of the week. According to Adepoju et al. (2014), BMI was not significantly different across groups. Overall, 74% of subjects in this trial were obese and an additional 20% were overweight; the mean BMI was 34.28 kg/m^2 (Adepoju et al., 2014). The baseline HgbA1c for the participants in the study was 9.28. Adepoju et al. (2014) found that persons with chronic diseases who were randomized to receive the CDSMP class had fewer hospitalizations and spent, on average, 0.8 fewer nights in the hospital after six months of receiving the intervention.

Questionnaires

Our method was based on Farrell's (2008) method in which changes in perceived health status were measured using a 100mm horizontal Visual Analog Scale (VAS) for rating current fatigue, pain/discomfort, and shortness of breath. In addition, several Likert scales measuring self-rated health, physical abilities, energy/fatigue, health distress, illness intrusiveness, and activity limitations were also used to evaluate perceived health status. Reliability and validity studies on the CDSMP specific measurement scales documented that several instruments are useful in measuring change

in intervention studies and are understood by and acceptable to patients and other research subjects (Farrell, 2008).

According to Farrell (2008), "the program instruments are reliable and valid in African American, Hispanic, and Native American diverse populations and have been used extensively in the US, Canada, and internationally in England, Australia, Africa, and South America" (para. 19). Farrell (2008) stated that:

> significant decreases were reported by participants in areas of health distress (p = .01) and energy/fatigue (p = .01). The mean and median scores suggested less distress about health status and energy/fatigue. The mean and median scores of several other indicators of perceived health status also improved. The median and mean of VAS fatigue and shortness of breath over the past two weeks also decreased (para. 27).

Patient questionnaires can be administered at the beginning of the program to obtain a baseline, and at 12 weeks, and 12 months post implementation. The questionnaires obtain technological experience (i.e., any experience using computers, the Internet); self-reported health-related quality of life measures (i.e., number of days impairments kept the participant from usual activities such as work); diabetes self-care activities (number of days, 0 to 7, any specific self-care activity was performed in the past week); pain and fatigue measures (on a scale of 1 to 10, 1 indicating none and 10 severe); and physical activity measures will be collected (Adepoju et al., 2014).

The instrument used to collect the data will be the CDSMP outcome questionnaire provided by the Stanford School of Medicine (Appendix B). The questionnaire should

take no more than five minutes to administer. The Stanford School of Medicine questionnaire was chosen because it assesses the patients' knowledge about their medical history and knowledge related to their health. The questionnaire asks questions regarding the patient's general health, symptoms, physical activity, and daily activities, as well as medical care. A systematic review of evidence that was done by the Agency for Research and Healthcare Quality found that adults with lower health literacy histories have worse health care and poorer outcomes (National Academy of Sciences, 2009). The literacy measure that can be used in this project is the Rapid Estimate of Adult Literacy in Medicine (REALM), a word-recognition survey. The REALM could be rapidly completed, although it requires interviewer administration (National Academy of Sciences, 2009).

Patient Post Education Surveys

Patient surveys (Appendix C) will be administered at the end of the 12-week class series to get feedback from the participants on the program and to give the participants an opportunity to share their experience of the program. The survey will also capture behavioral changes and way of thinking from the participants' point of view from the beginning of the program through to the 12-month follow up.

Proposed Program Evaluation Process, Data Collection Plan, and Data Analysis

The aim of the project evaluation plan is to determine if the CDSMP in adults ages 50 and older with increased BMI and HgbA1c is a successful program for use in this ambulatory care clinic setting. The proposed evaluation will use a one-sample quasi-experimental design with baseline, 12-week, and 12-month data collection to monitor

changes in perceived health, health behaviors, BMI, and HgbA1c. According to the National Center for Technology Innovation (2014), a quasi-experimental design is a type of evaluation that aims to determine whether a program or intervention has met its intended effect on participants.

The Stanford School of Medicine (2014) believed that those who enrolled in CDSMP maintained many of their health and behavioral improvements over time and that the CDSMP resulted in significant, measurable improvements in patient outcomes and quality of life. According to Paone (2015), implementation effectiveness at the organizational level must be achieved in order to reach these individuals and sustain the program. To determine if the program results in long-term benefits, the Stanford CDSMP questionnaire, BMI, and HgbA1c data will be collected at 12 months post implementation.

Implications for Practice and Policy

Reaching individuals who can benefit from evidence-based health promotion and disability prevention programs is a goal of federal, state, and local agencies, as well as researchers, providers, community agencies, and other stakeholders (Paone, 2014). One advantage of conducting a literature review is to obtain a clear picture of what different organizations are implementing at their practice setting to address similar problems. The literature that supported this project is important because it demonstrated that the patients' outcomes and results were consistently positive at the organizations that have implemented the CDSMP. Patients' health was significantly increased in all the reviewed literature (Paone, 2014). According to Paone (2014), the CDSMP was designed

to build on the strengths and capabilities of individuals including belief in their own abilities, knowledge of what to do regarding their condition, and behavior skills development to address situations that arise. Disseminating the CDSMP in a practice setting and reaching individuals who can benefit from evidence-based health promotion (EBHP) and disability prevention programs are important goals for population health (Paone, 2014). An implication for nursing practice is the need for DNP-prepared nurses to effect positive changes in population health.

Implications for Research

According to Basu, Ory, Towne, Smith, Hochhalter, and Ahn (2015), "chronic conditions are the leading cause of growing health care spending, disability, and death in the U.S. In the wake of national health reform, policy makers and health care professionals are becoming increasingly concerned about containing health care costs while improving quality of patient care" (para. 1). In light of the growing prevalence of chronic illness, health care cost burdens, and concerns for promoting population health, service providers and policymakers are pursuing more cost-effective ways to improve the health and well-being of the population (Basu et al., 2015). Basu et al. (2015) believed that identifying ways to manage the progression of multiple chronic conditions among older adults is critical and time-sensitive amid concerns regarding future implications of growing costs of care (para. 3). According to Basu et al. (2015), "to promote the health and the quality of life of community-dwelling older adults, federal, state, and local stakeholders are implementing evidence-based initiatives to engage individuals in managing their own chronic health conditions while improving their health outcomes"

(para. 4). It is essential that future research identify primary, secondary, and tertiary prevention that can change the trajectory of obesity to diabetes.

Implications for Social Change

Farrell (2008) believed that the development of a tailored intervention aimed at empowering participants with knowledge and skills for chronic disease self-management could improve long-term patient outcomes. According to Farrell (2008), "cultural context was central to the design of the intervention, which was created within the framework of self-efficacy theory"(para. 9). Judgments of personal capability are a concern of self-efficacy (Farrell, 2008). According to Ory and Smith (2015), evidence-based programming for older adults has come of age. Adepoju et al. (2014) stated that evidence exists in the literature suggesting that the CDSMP can improve health status and reduce hospitalizations. Past successes in identifying evidence-based programming have led to new emphases in translating research into practice and policy (Ory & Smith, 2015). Ory and Smith (2015) suggested that CDSMP "intervention is feasible, acceptable to the population, and is beneficial beyond usual care in terms of improved perceived health status and self-management behaviors" (p. 14). Farrell (2008) stated "other published CDSMP studies also suggested effectiveness, and health care systems should consider implementing self-management programs for patients with chronic conditions" (para. 5). The results of this proposed program can be translated into evidence-based practice by helping persons with a chronic disease to understand their illness and ability (actual or potential) to assume responsibility for management of their own health (Kralik, Paterson, & Coates, 2010). Additionally, translating the CDSMP into a clinical practice that

enrolls low-income indigent patients may help to address health disparities and help patients suffering from obesity, diabetes, or both experience better outcomes.

Strengths and Limitations of the Project

The strengths of this project identified during the program planning were that high quality evidence was used and it all supported implementation of the CDSMP. According to Stanford School of Medicine (2014), there is strong evidence across studies that CDSMP has a beneficial effect on physical and emotional outcomes, and health-related quality of life. The proposed program was also cost-effective with minimal materials and staff time needed.

Limitations that might be encountered if the program is implemented are recruiting and retaining patients for the study. According to Elzen, Slaets, Snijders, and Steverink (2007), the number of participants in CDSMP studies varied from 430 to 683, so the sample size at the program ambulatory clinic site will clearly be smaller, but the planned sample is comparable to that of other studies with regard to gender and marital status; with regard to age, the proposed program sample is somewhat older (Elzen et al., 2007). The implementation may add to the nursing body of knowledge by demonstrating that the approach works with smaller groups of participants in small ambulatory clinic settings. Participants in the proposed program will be selected from the files of physicians in an outpatient clinic and subsequently personally invited to participate by one of the team members. In most of the other CDSMP studies, the patients were recruited through public announcements. It is possible that patients who took the

initiative to apply for participation were more motivated than the invited participants (Elzen et al., 2007).

Section 5: Dissemination Plan

Introduction

The purpose of this project was to design a program that would decrease BMI and HgbA1c in a sample of older ambulatory clinic patients through implementation of the CDSMP, developed by Stanford University, as an intervention to improve participants' health status and health outcomes.

This section will describe the program for dissemination of the DNP project findings and deliverables. The first site to implement the planned project will be my current organization that is non-profit and government funded. My organization has a large population of patients with increased BMI and HgbA1c who can benefit from the program. According to Forsyth, Wright, Scherb, and Gasper (2010), numerous methods are appropriate for EBP dissemination to stakeholders, consumers, or other health care professionals. A poster serves as a storybook to share information in a concise way (Forsyth et al., 2010). I plan to present the program implementation plan, recommendations for a pre-test/post-test questionnaire (Appendix B), a participant satisfaction survey (Appendix C), a Gantt chart timeframe and responsibility guide (Appendix D), and a scholarly poster (Appendix E) overview of the project at the monthly quality review board meeting. A copy of the Gantt chart detailing the proposed program implementation plan will be handed out to the Board members for consideration at this meeting. I would also like to submit an abstract for a poster presentation or podium presentation in the future at conferences such as the Diabetes National

Conference, the Ambulatory Care National Conference, and the International Conference and Exhibition of Obesity.

Analysis of Self

Scholar. According to Michigan Health Council (2015), nurses form the largest group of professionals within the health care workforce, and the practice of nursing is one of the most diverse, as the profession addresses clinical, leadership, public policy, and public health care needs (Michigan Health Council, 2014, para. 1). This DNP project has helped me to develop as a scholar and has increased my knowledge of evidence-based practice, systems leadership, and quality improvement (American Association of Colleges of Nursing, 2015). As a DNP scholar, I have been exposed to the leadership skills necessary to meet the challenges of increasingly complex health care organizations, influence policy, and apply clinical methodologies for organizational quality improvement.

Practitioner. Nursing is my passion and ministry. Walden's DNP program has helped me to evolve as a practitioner. It has given me the confidence and in-depth training needed to influence practice. Through this DNP program, I have been engaged in translating evidence into clinical practice through numerous practicum projects. The DNP project has the potential to advance practice at the local, state, and national level. Currently, I am an executive nurse manager. Leadership is the backbone of health care delivery. By obtaining this terminal degree and implementing the skills I have learned in this program, I will advance in my career and may attain my goal of being a chief nursing officer to affect nursing practice at a higher level.

Project Developer and Manager

Project management, according to Lewis (2007), is a temporary endeavor undertaken to produce a unique product, service, or result (p. 4-5). Shadowing my preceptor over the past year and a half has exposed me to leading projects and developing favorable outcomes to ensure that all work is completed on time, within budget and scope, and at the correct performance level (Interop Nurse, 2011). My goal as the project developer and manager is to implement this DNP project at my organization and disseminate the outcomes and lessons learned to organizations that can benefit from the information in their setting.

Summary

Unlike medical doctors, who focus on disease management, self-management programs encourage the patient to become the expert by learning to "manage the symptoms, treatment, physical and psychological consequences and life style changes inherent in living with a chronic condition" (Du & Yuan, 2010, p. 159). The deliverables for the DNP project were a plan for implementation that will be agreed upon with the project team and tracked using a Gantt chart (Appendix D); a recruitment plan of patients for the enrollment in the program; a suitable, valid, and reliable questionnaire; and a post educational class series questionnaire (Appendix C) to determine the patients' satisfaction with the program and areas for class delivery and content improvement. This project will be disseminated at the ambulatory clinic and presented through national conferences via a poster presentation (Appendix E). Kim and Youn (2015) argued that "in a health care system deficient in preventive comprehensive services for the chronically ill, the CDSMP

might help patients to successfully manage their own illnesses in daily life" (p. 42). According to Kim and Youn (2015), "the beneficial effects of the CDSMP were greater for those with low health literacy" (p. 46). Based on this project's findings, health care professionals should make the CDSMP available to patients and encourage the participation of older adults with chronic illnesses in the CDSMP, particularly those with low health literacy (Kim & Youn, 2015, p. 45).

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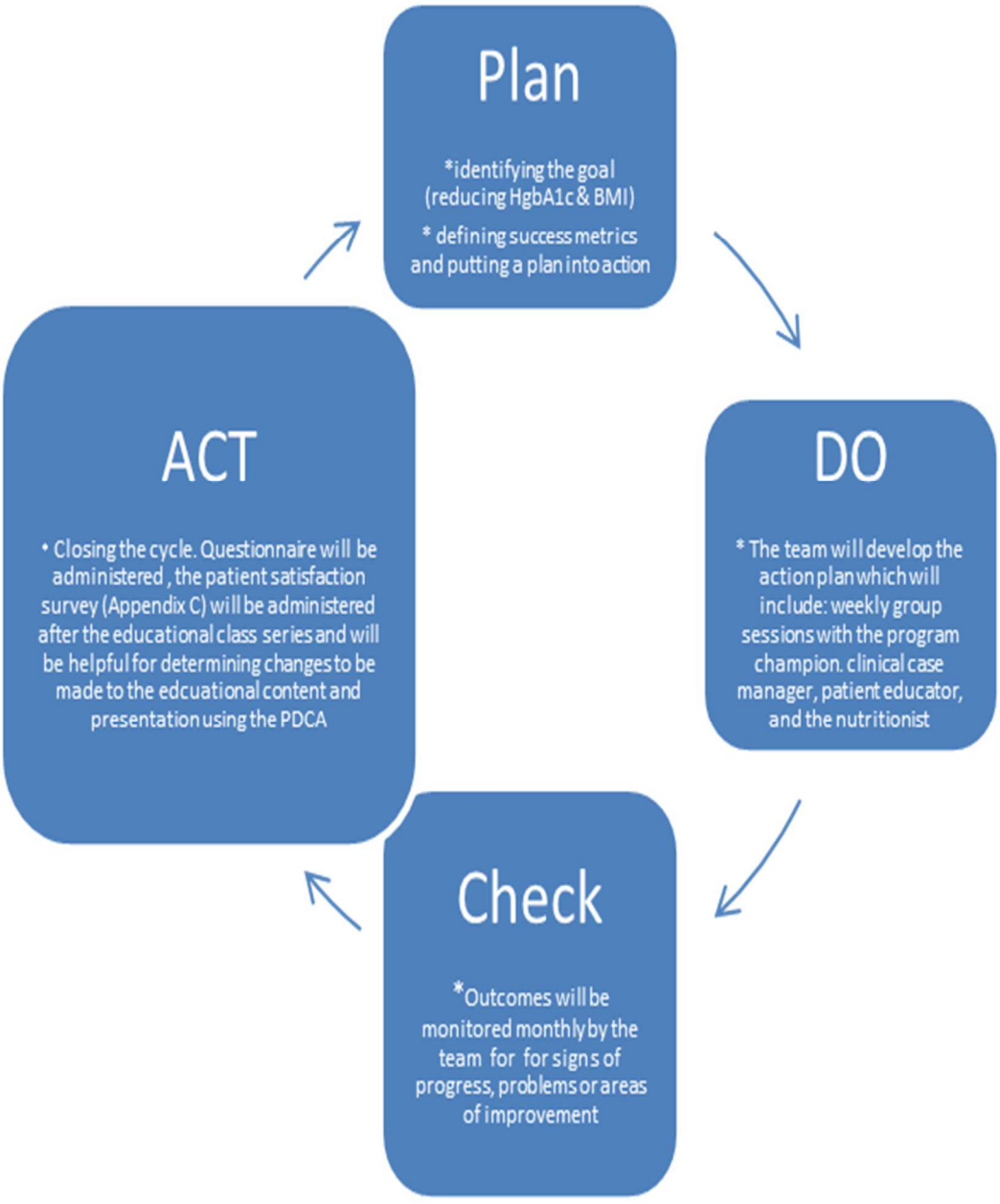
Appendix A: PLAN DO CHECK ACT (PDCA)



Appendix B: Stanford Pre-Questionnaire Survey

1. Ethnic origin *(check **only one**):*

- ❑ White not Hispanic
- ❑ Black not Hispanic
- ❑ Hispanic
- ❑ Asian or Pacific Islander
- ❑ Filipino
- ❑ American Indian/Alaskan Native
- ❑ Other: _____

2. Please circle the ***highest*** year of school completed:

1 2 3 4 5 6 *(primary)* 7 8 9 10 11 12 *(high school)* 13 14 15 16 *(college/university)* 17 18 19 20 21 22 *(graduate school)* 23+

3. Are you currently *(check **only one**):*

- ❑ Married
- ❑ Single
- ❑ Separated
- ❑ Divorced
- ❑ Widowed

4. Please indicate below which chronic condition(s) you have:

- ❑ Diabetes
- ❑ Asthma
- ❑ Emphysema or COPD
- ❑ Other lung disease *Type of lung disease:*_____
- ❑ Heart disease *Type of heart disease:*_____
- ❑ Arthritis or other rheumatic disease *Specify type:*

During the **past 2 weeks**, how much... *(Circle **one**)*

	Not at all	**Slightly**	**Moderately**	**Quite a bit**	**Almost totally**
1. Has your health interfered with your normal social activities with family, friends, neighbors or groups?	0	1	2	3	4
2. Has your health interfered with your hobbies or recreational activities?	0	1	2	3	4
3. Has your health interfered with your household chores?	0	1	2	3	4
4. Has your health interfered with your errands and shopping?	0	1	2	3	4

1. When you **visit your doctor**, how often do you do the following *(please circle **one** number for each question):*

	Never	Almost never	Some-times	Fairly often	Very often	Always
a. Prepare a list of questions for your doctor	0	1	2	3	4	5
b. Ask questions about the things you want to know and things you don't understand about your treatment	0	1	2	3	4	5
c. Discuss any personal problems that may be related to your illness	0	1	2	3	4	5

2. **In the past 6 months**, how many times did you visit a physician?
*Do **not** include visits while in the hospital or the hospital emergency department*..._____ visits

3. **In the past 6 months**, how many times did you go to a **hospital** emergency department?....._____ times

4. **In the past 6 months**, how many TIMES were you hospitalized for one night or longer? ....._____ times

Stanford Pre-Questionnaire Survey (Continued)

I. In general, would you say your health is: *(circle one)*

Excellent

Very Good

Good

Fair

Poor

	II. Daily Activities	***(Circle one)***				
		Not at all	**Slightly**	**Moderately**	**Quite a bit**	**Almost totally**
1	**During the past 2 weeks,** how much has your sickness stopped you from being with family, friends, neighbors or groups?	**0**	**1**	**2**	**3**	**4**
2	**During the past 2 weeks,** how much has your sickness stopped you from doing things you enjoy like reading, playing sports or other fun things?	**0**	**1**	**2**	**3**	**4**
3	**During the past 2 weeks,** how much has your sickness stopped you from doing everyday work around your house (e.g. cleaning, cooking etc.)?	**0**	**1**	**2**	**3**	**4**
4	**During the past 2 weeks,** how much has your sickness stopped you from doing	**0**	**1**	**2**	**3**	**4**

	other things that you need to do such as shopping?					
III. Controlling My Sickness For each of the following questions, please ***circle one*** number for each question that tells how you feel about doing things easily at this time:		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	Feeling tired from being sick does not stop me from doing things that I want to do.	**1**	**2**	**3**	**4**	**5**
2	Feeling pain, aches, or hurting from being sick does not stop me from doing things I want to do.	**1**	**2**	**3**	**4**	**5**
3	Feeling upset, sad, or crying from being sick does not stop me from doing things I want to do.	**1**	**2**	**3**	**4**	**5**
4	Feeling any other signs of sickness or health problems (aches, pains, or being sad) does not stop me from doing things I want to do.	**1**	**2**	**3**	**4**	**5**
5	I can do things I need to do to control my sickness so that I don't go to the ER or ask to see my doctor.	**1**	**2**	**3**	**4**	**5**
6	I can do things other than just take a pill to stop my sickness from being a problem every day.	**1**	**2**	**3**	**4**	**5**

Appendix C: Post-Educational Class Series Survey

1. As a result of the classes, I have made changes to my lifestyle, i.e., healthy eating, exercise, etc.?

(circle only one)

Strongly agree

Agree

Disagree

Strongly disagree

2. What ways could the classes be better?

3. Would you recommend the classes to a friend or family member? (circle one)

Yes

No

Appendix D: Gantt Chart

	Task Name	Start Date	End Date	Duration	Predecessors	% Complete	Assigned To	Comments
2	**Implementing CDSMP in ambulatory setting**	**02/01/16**	**02/05/16**	**5d**		**33%**		
3	Overview of CDSMP (including the history of the CDSMP)	02/01/16	02/05/16	5d		50%	Project Champion	
4	Identify project team and assign roles for the project	02/01/16	02/05/16	5d		50%	Project Champion	
5	Discuss Goals, Outcomes	02/01/16	02/05/16	5d		0%	Project Team	
6	**Recruitment of Patients done by staff nurse, and patient educator**	**02/15/16**	**02/19/16**	**5d**			**Staff nurse, patient educator**	
7	Identifying patients from provider panel with a HgBA1c >12	02/15/16	02/19/16	5d			Staff Nurse, Patient educator	
8	Identifying patients from provider panel with a BMI >30	02/15/16	02/19/16	5d			Staff Nurse, Patient educator	
9	**Class will be delivered**	**03/01/16**	**04/11/17**	**291d**			**Different sessions will be taught by different members of the project team**	
10	session 0	03/01/16	03/01/16	1d			Project Champion, Physcian	
11	session 1	03/08/16	03/08/16	1d			Patient educator	
12	session 2	03/15/16	03/15/16	1d			Project champion	
13	session 3	03/22/16	03/22/16	1d			Physcian	
14	session 4	03/29/16	03/29/16	1d			Case Manager	
15	session 5	04/05/16	04/05/16	1d			nutritionist	
16	session 6	04/11/16	04/11/16	1d			Physcian	
17	**Data Analysis**	**04/11/16**	**04/11/17**	**262d**				
18	One sample quasi- experimental design	04/11/16	04/11/16	1d				with baseline, 6-week, and 12-month data collection to monitor changes in perceived health, health behaviors, BMI, and HgbA1c
19	CDSMP questionnaire	04/11/17	04/11/17	1d			Patient educator	To determine if the program results in long-term benefits, the Stanford CDMSP questionnaire, BMI, and HgbA1c data will be collected at 12 months post implementation.
20								
21								
22								

B	C	D	E
Discussion Title	Overview of CDSMP (including the history of the CDSMP)	Raquel Biati	02/29/16 5:05 PM
Comments	The overview of the project will be done by the project champion. The history w	Raquel Biati	02/29/16 5:05 PM
Discussion Title	Identify project team and assign roles for the project	Raquel Biati	02/29/16 5:08 PM
Comments	The Project team will consist of a team champion which is me, and the patient e	Raquel Biati	02/29/16 5:08 PM
Discussion Title	Discuss Goals, Outcomes	Raquel Biati	02/29/16 5:12 PM
Comments	The goals of the project will be discussed in detail during this time. The goal of t	Raquel Biati	02/29/16 5:12 PM
Discussion Title	Recruitment of Patients done by staff nurse, and patient educator	Raquel Biati	02/29/16 5:15 PM
Comments	The recruitment of patients will be done by the staff nurse, and patient educato	Raquel Biati	02/29/16 5:15 PM
Discussion Title	session 0	Raquel Biati	02/29/16 7:35 PM
Comments	Session Zero is to provide an overview of the workshop, explain expectations fo	Raquel Biati	02/29/16 7:35 PM
Discussion Title	session 1	Raquel Biati	02/29/16 7:37 PM
Comments	the patients will be educated on techniques to address problems such as frustra	Raquel Biati	02/29/16 7:37 PM
Discussion Title	session 2	Raquel Biati	02/29/16 7:38 PM
Comments	the patients will learn appropriate exercise for maintaining and improving stren	Raquel Biati	02/29/16 7:38 PM
Discussion Title	session 3	Raquel Biati	02/29/16 7:39 PM
Comments	medications will be explained	Raquel Biati	02/29/16 7:39 PM
Discussion Title	session 4	Raquel Biati	02/29/16 7:39 PM
Comments	how to communicate effectively with family, friends, and health professionals.	Raquel Biati	02/29/16 7:39 PM
Discussion Title	session 5	Raquel Biati	02/29/16 7:40 PM
Comments	will cover nutrition and will be taught by the nutritionist.	Raquel Biati	02/29/16 7:40 PM
Discussion Title	Data Analysis	Raquel Biati	02/29/16 7:41 PM
Comments	will be taught by the physician and he will explain how to evaluate new treatme	Raquel Biati	02/29/16 7:41 PM
Discussion Title	Post Survey	Raquel Biati	02/29/16 7:31 PM
Comments	will be administered at the end of the 6-week class series to get feedback from	Raquel Biati	02/29/16 7:31 PM

Appendix E: Poster Presentation

Chronic Disease Self Management Program

Raquel Biati, **DNP,MSN,RN**

Abstract

The World Health Organization (2013) stated that type 2 diabetes and obesity are major health problems that have reached epidemic proportions and are growing at alarming rates around the world. Currently, nearly 170 million people worldwide face the dual challenge of managing both type 2 diabetes and obesity (WHO, 2013).

Problem

practice problem addressed by this DNP project was the increasing prevalence of adults age 50 and older in an ambulatory setting who suffer from obesity and diabetes and may benefit from a tailored weight management and nutrition education intervention.

Purpose

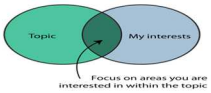
The purpose of this project was to plan a program design that would decrease body mass index and hemoglobin A1c in a sample of older patients through implementation of the Chronic Disease Self-Management Program, developed by Stanford University, as an intervention to improve participants' health status and health outcomes.

Relevant Literature

The trends of rising healthcare costs demonstrate the need for alternative models of care to mitigate the risk factors associated with chronic disease (Majers, 2010). New approaches are needed to manage chronic disease that will contain or reduce cost and produce value (Majers, 2014). Erdem and Korda (2014) argued that evidence-based self-management education and training programs have been widely implemented to help older adults manage their diabetes, and have shown improved psychosocial and clinical outcomes for participants. The CDSMP is well known in disease management and prevention model for engaging patients in their care. The importance of implementing the CDSMP and a diabetes-specific management program (DSMP) were discussed by Erden and Korda (2014). Self-efficacy is the theoretical foundation of the CDSMP. When applied to chronic disease self-management programs, self-efficacy serves as the conceptual framework upon which these programs are based (Majers, 2014). The EBP model that was used to translate the CDSMP into practice is the plan-do-check/study-act (PDCA).

Research Questions

To determine if the CDSMP in adults ages 50 and older with increased BMI and HgbA1c is a successful program for use in this ambulatory care clinic setting.



Procedures

The evidence for this project was obtained through a structured literature review and analysis evidence-based research findings. A search of the peer-reviewed literature in the CINAHL full-text database was conducted. The search was initiated with the following key words: self-management programs, chronic disease self-management programs, CDSMP, obesity, diabetes, and obesity and diabetes. Numerous articles related to obesity as well as obesity and diabetes were retrieved.

Data Analysis

The instrument used to collect the data will be the CDSMP outcome questionnaire provided by the Stanford School of Medicine. The literacy measure that can be used in this project is the Rapid Estimate of Adult Literacy in Medicine (REALM), a word-recognition survey. Patient surveys (Appendix C) will be administered at the end of the 12-week class series to get feedback from the participants on the program and to give the participants an opportunity to share their experience of the program. The survey will also capture behavioral changes and way of thinking from the participants' point of view from the beginning of the program through 12-month follow up.

Findings

The results of this proposed program can be translated into evidence-based practice by helping persons with a chronic disease to understand their illness and ability (actual or potential) to assume responsibility for management of their own health (Kralik, Paterson, & Coates, 2010). Additionally, translating the CDSMP into a clinical practice that enrolls low income indigent patients may help to address health disparities and help patients suffering from obesity, diabetes, or both experience better outcomes.

Limitations

Limitations that might be encountered if the program is implemented are recruiting and retaining patients for the study. According to Elzen, Slates, Snijders, and Steverink (2007), the number of participants in CDSMP studies varied from 430 to 683, so the sample size at the program ambulatory clinic site will clearly be smaller, but the planned sample is comparable to that of other studies with regard to gender and marital status; with regard to age, the proposed program sample is somewhat older (Elzen et al., 2007). The implementation may add to the nursing body of knowledge by demonstrating that the approach works with smaller groups of participants in small ambulatory clinic settings.

Conclusions

Kim and Youn (2015) argued that in a health care system deficient in preventive comprehensive services for the chronically ill, the CDSMP might help patients to successfully manage their own illnesses in daily life lives. According to Kim and Youn (2015), the beneficial effects of the CDSMP were greater for those with low health literacy. Based on this project's findings, healthcare professionals should make the CDSMP available to patients and encourage the participation of older adults with chronic illnesses in the CDSMP, particularly those with low health literacy (Kim & Youn, 2015).

Social Change Implications

The results of this proposed program can be translated into evidence-based practice by helping persons with a chronic disease to understand their illness and ability (actual or potential) to assume responsibility for management of their own health (Kralik, Paterson, & Coates, 2010). Additionally, translating the CDSMP into a clinical practice that enrolls low income indigent patients may help to address health disparities and help patients suffering from obesity, diabetes, or both experience better outcomes.